Panoramic Depth Estimation
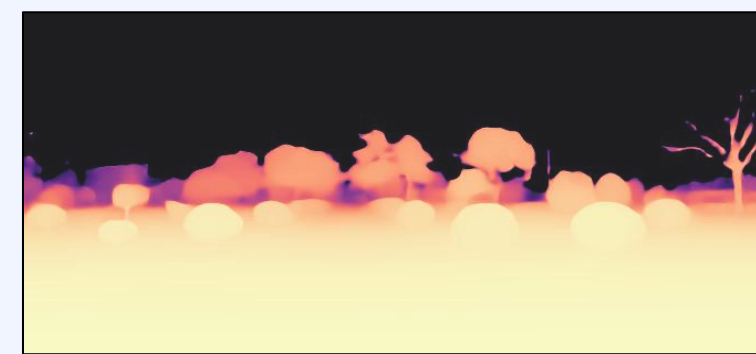

Lightweight Panoramic Policy

UAV States

- Velocity
- Goal
- Quaternion
- Position

Panoramic Depth Estimation Network
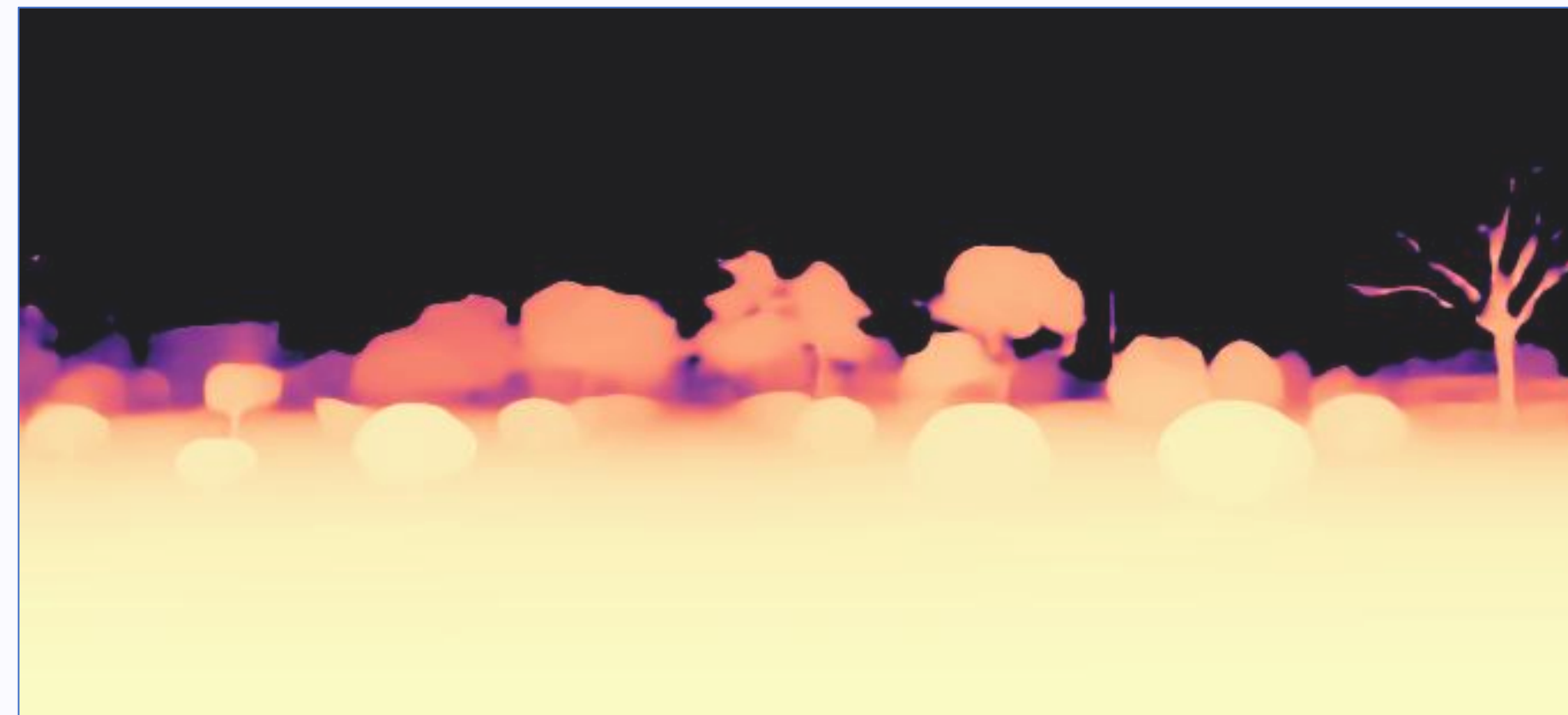
Low-resolution Depth

64 × 128

Policy Network

Concat | MLP | ... | ReLU

SphereConv | ReLU | ... | Flatten
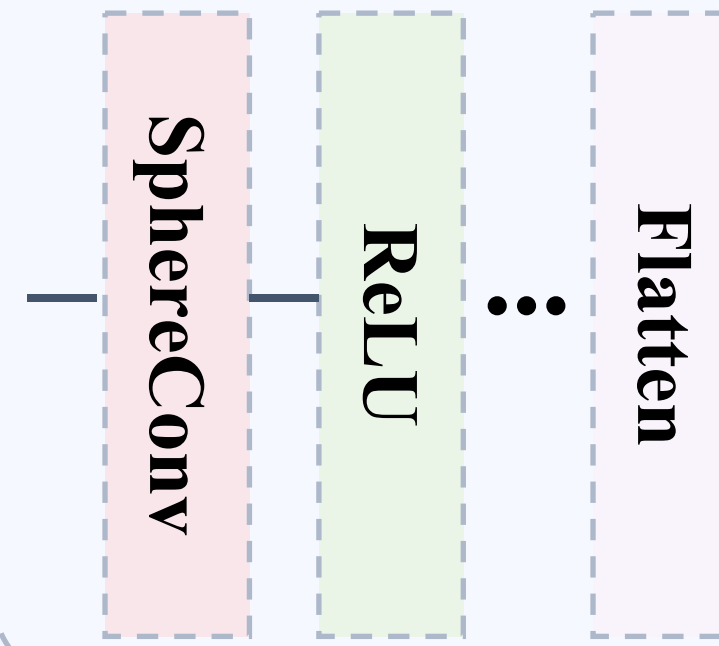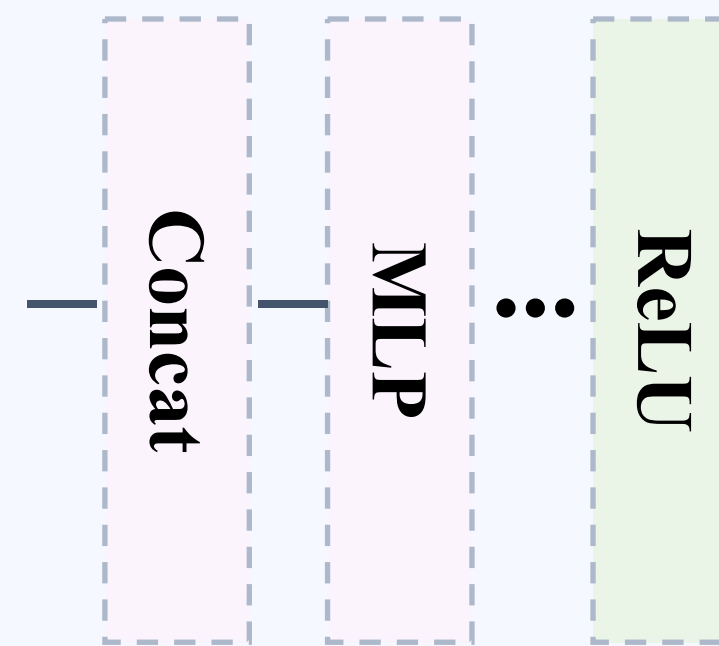
MLP

v_x
v_y
v_z

Training

Differentiable Simulator → Objective function

- Velocity tracking
- Collision penalty
- ...
- Velocity smoothness

Inference

Velocity Flight Controller → Rotor-level Control